

THE MINERAL INDUSTRY OF MARYLAND

This chapter has been prepared under a Memorandum of Understanding between the U.S. Bureau of Mines, U.S. Department of the Interior, and the Maryland Geological Survey for collecting information on all nonfuel minerals.

Maryland ranked 35th among the 50 States in total nonfuel mineral production value,¹ up from 36th in 1994, according to the U.S. Geological Survey (USGS). The estimated value for 1995 was \$341 million, a slight increase from that of 1994. This followed an 8.5% increase from 1993 to 1994 (based on final data). The State accounted for almost 1% of the U.S. total nonfuel mineral production value.

Crushed stone remained Maryland's leading nonfuel mineral commodity, accounting for nearly 50% of the State's nonfuel mineral value, followed by portland cement, 26%, and construction sand and gravel, 17%. In 1995, crushed stone was the only commodity with a significant increase in value. Compared with 1994, other mineral commodity values that increased in 1995 were dimension stone and industrial sand and gravel. Decreases occurred for construction sand and gravel and masonry and portland cements. In 1994, increases in masonry cement, crushed stone, and portland cement accounted for nearly all of the State's increase in nonfuel mineral value, mitigated somewhat by a moderate decrease in construction sand and gravel.

Compared with USGS estimates of the quantities produced in the other 49 States during 1995, Maryland was third in masonry cement, following a ranking of first in 1994. Additionally, the State produced significant quantities of crushed stone, portland cement, and dimension stone. All nonfuel minerals mined in Maryland were industrial minerals. All metals produced, in particular

primary aluminum and raw steel, were processed from materials received from foreign and other domestic sources. Based on preliminary figures for both metals, Maryland was seventh in the Nation in the production of primary aluminum and one of the top eight raw steel-producing States.

The Maryland Department of the Environment (MDE)² reported that in 1995 Lehigh Portland Cement Co. applied for a permit to open a stone quarry on a 28-hectare (69-acre) site near Woodsboro in Frederick County. The company intended to mine the Cash-Smith shale to produce lightweight aggregate. Public hearings were held and permit issuance was likely during 1996.

Applications for mining permits from sand and gravel companies in 1995 remained constant with the past several years. The MDE anticipated new quarry applications to be submitted by Laurel Sand and Gravel, Inc. for a Howard County site and by the Arundel Corp. for a site in Carroll County.

The Sparrows Point Division of Bethlehem Steel Corp. shipped 3.2 million metric tons³ of steel products during 1995, compared to 2.9 million tons in 1994 and 2.8 million tons in 1993. Also during 1995, Sparrow Point's blast furnace L established a North American record of 305,000 tons of iron. Operating results improved during 1995 as a result of higher prices, increased facility utilization, and higher productivity. After decades of reduced operations and employee reductions, the Division hired about 200 new employees in 1995 from a pool of

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN MARYLAND^{1 2}

Mineral	1993		1994		1995 ^p	
	Quantity	Value (thousands)	Quantity	Value (thousands)	Quantity	Value (thousands)
Cement (portland) metric tons	1,630,000	\$81,600	1,710,000	\$90,700	1,680,000	\$89,300
Clays thousand metric tons	294	705	293	946	313	948
Gemstones	NA	1	NA	1	NA	1
Sand and gravel (construction) thousand metric tons	^e 11,200	^e 72,200	8,920	61,200	8,400	58,400
Stone:						
Crushed ³ do.	^e 21,000	^e 139,000	24,100	162,000	24,800	169,000
Dimension metric tons	19,300	2,020	18,800	1,550	23,600	1,950
Combined value of other industrial minerals	XX	^e 11,200	XX	^e 24,000	XX	21,800
Total	XX	^e 307,000	XX	^e 340,000	XX	341,000

^eEstimated. ^pPreliminary. ^rRevised. NA Not available. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Data are rounded to three significant digits; may not add to totals shown.

³Excludes certain stones; kind and value included with "Combined value" data.

several thousand applicants.

The Governor of Maryland transferred responsibility for the regulation of mining, wetlands dam safety, and water appropriation to the MDE. This action was taken to allow a closer coordination with other related programs, such as the National Pollutant Discharge Elimination Systems (NPDES) permitting and the State's air quality control. NPDES activities are coordinated from within the MDE Division of Waste Management. Although the mining program still is located in Annapolis, the State Capitol, it eventually will be relocated to Baltimore.

The MDE has begun the process of developing zones of dewatering influence around limestone quarries in karst terrain in Baltimore, Washington, Frederick, and Carroll Counties. The zones are based on topography, geologic and hydrogeologic factors, impacts to wells, and historical data. The Department has been seeking and obtaining

information from quarry operators and the public in determining the zones. Quarry operators are responsible for any well failures and sinkhole damage in a zone unless they can prove that damage was caused by factors other than the quarry's operation.

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on the minerals or mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 1995 USGS mineral production data are estimates, as of Dec. 1995. For some commodities, especially construction sand and gravel, crushed stone, and portland cement, estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Call MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset and request Document No. 1000 for a telephone listing of all mineral commodity specialists or call USGS information at (703) 648-4000 for the specialist's name and number.

²This report includes information provided by the MDE.

³The conversion factor to change metric tons to short tons is 1.1023.

TABLE 2
MARYLAND: CRUSHED STONE¹ SOLD OR USED BY PRODUCERS IN 1994, BY USE²

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Coarse aggregate (+1 1/2 inch), riprap and jetty stone ³	1,130	\$8,120	\$7.16
Coarse aggregate, graded:			
Concrete aggregate, coarse	2,340	13,000	5.54
Bituminous aggregate, coarse	1,630	10,700	6.61
Bituminous surface-treatment aggregate	449	3,710	8.26
Railroad ballast	139	1,080	7.79
Other graded coarse aggregate	2,890	18,600	6.42
Fine aggregate (-3/8 inch):			
Stone sand, concrete	464	3,600	7.77
Stone sand, bituminous mix or seal	1,340	9,060	6.77
Screening, undesignated	325	1,790	5.50
Coarse and fine aggregates:			
Graded road base or subbase	3,680	21,600	5.88
Unpaved road surfacing	W	W	6.26
Terrazzo and exposed aggregate	W	W	7.62
Crusher run or fill or waste	2,440	17,800	7.30
Other coarse and fine aggregates	W	W	2.20
Other construction materials ⁴	610	3,170	5.20
Agricultural: Agricultural limestone	(⁵)	(⁵)	7.51
Chemical and metallurgical: Cement manufacture	2,030	4,670	2.30
Special: Whiting or whiting substitute	(⁵)	(⁵)	92.60
Unspecified: ⁶			
Actual	(⁵)	(⁵)	5.00
Estimated	1,030	7,160	6.93
Total	24,100	162,000	6.73

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

¹Includes granite, limestone, sandstone, and traprock; excludes miscellaneous stone from State total to avoid disclosing company proprietary data.

²Data rounded to three significant digits; may not add to totals shown.

³Includes filter stone.

⁴Includes roofing granules.

⁵Withheld to avoid disclosing company proprietary data; included in "Total."

⁶Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 3
MARYLAND: CRUSHED STONE SOLD OR USED, BY KIND¹

Kind	1993				1994			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Limestone	21	'16,100	'\$109,000	'\$6.78	20	16,900	\$114,000	\$6.77
Granite	4	4,800	28,600	5.97	4	4,940	31,600	6.40
Traprock	W	W	W	W	3	2,010	14,100	7.02
Sandstone	4	187	1,400	7.46	4	242	2,000	8.26
Miscellaneous stone	W	W	W	W	(²)	(²)	(²)	(²)
Total	XX	'21,000	'139,000	'6.60	XX	24,100	162,000	6.73

¹Revised. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

²Data are rounded to three significant digits; may not add to totals shown.

³Excludes miscellaneous stone from State total to avoid disclosing company proprietary data.

TABLE 4
MARYLAND: CRUSHED STONE^{1 2} SOLD OR USED BY PRODUCERS IN 1994, BY USE AND DISTRICT³

(Thousand metric tons and thousand dollars)

Use	District 1		District 2	
	Quantity	Value	Quantity	Value
Construction aggregates:				
Coarse aggregate (+1 1/2 inch) ⁴	W	W	W	W
Coarse aggregate, graded ⁵	W	1,410	W	45,700
Fine aggregate (-3/8 inch) ⁶	W	W	W	W
Coarse and fine aggregate ⁷	676	2,770	6,000	39,000
Other construction materials	348	1,170	10,400	22,100
Agricultural ⁸	—	—	(⁹)	(⁹)
Chemical and metallurgical ¹⁰	(⁹)	(⁹)	(⁹)	(⁹)
Special ¹¹	—	—	(⁹)	(⁹)
Unspecified: ¹²				
Actual	(⁹)	(⁹)	(⁹)	(⁹)
Estimated	4	21	1,040	7,220
Total	3,010	14,600	21,000	147,000

W Withheld to avoid disclosing company proprietary data; included with "Other construction materials."

¹Excludes miscellaneous stone from State total to avoid disclosing company proprietary data.

²Production reported in District 3 was included with "District 2" to avoid disclosing company proprietary data.

³Data are rounded to three significant digits; may not add to totals shown.

⁴Includes filter stone and riprap and jetty stone.

⁵Includes concrete aggregate (coarse), bituminous aggregate (coarse), bituminous surface-treatment aggregate, railroad ballast, and other graded coarse aggregate.

⁶Includes stone sand (concrete), stone sand (bituminous mix or seal), and screening (undesignated).

⁷Includes graded road base or subbase, terrazzo and exposed aggregate, unpaved road surfacing, crusher run (select material or fill), and other coarse and fine aggregates, and roofing granules.

⁸Includes agricultural limestone.

⁹Withheld to avoid disclosing company proprietary data; included in "Total."

¹⁰Includes cement manufacture.

¹¹Includes whitening or whitening substitute.

¹²Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 5
MARYLAND: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 1994, BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Value per ton
Concrete aggregate (including concrete sand)	4,700	\$31,200	\$6.64
Plaster and gunite sands	174	1,300	7.45
Concrete products (blocks, brick, pipe, decorative, etc.)	6	46	7.67
Asphaltic concrete aggregates and other bituminous mixtures	474	2,960	6.24
Road base and coverings ²	684	5,980	8.74
Fill	271	670	2.47
Other ³	51	194	3.80
Unspecified: ⁴			
Actual	1,590	12,400	7.80
Estimated	961	6,410	6.67
Total or average	8,920	61,200	6.86

¹Data are rounded to three significant digits; may not add to totals shown.

²Includes road and other stabilization (lime).

³Includes filtration and snow and ice control.

⁴Includes production reported without a breakdown by end use and estimates for nonrespondents.

TABLE 6
MARYLAND: CONSTRUCTION SAND AND GRAVEL¹ SOLD OR USED IN 1994, BY USE AND DISTRICT²

(Thousand metric tons and thousand dollars)

Use	District 2		District 3	
	Quantity	Value	Quantity	Value
Concrete aggregate and concrete products ³	4,260	28,900	622	3,680
Asphaltic concrete aggregates and road base materials ⁴	1,150	9,010	285	594
Other miscellaneous uses ⁵	35	94	15	100
Unspecified: ⁶				
Actual	1,590	12,400	—	—
Estimated	21	110	940	6,300
Total	7,060	50,500	1,860	10,700

¹Production reported in District 1 was included with "District 2" to avoid disclosing company proprietary data.

²Data are rounded to three significant digits; may not add to totals shown.

³Includes plaster and gunite sands.

⁴Includes fill and road and other stabilization (lime).

⁵Includes filtration and snow and ice control.

⁶Includes production reported without a breakdown by end use and estimates for nonrespondents.



U. S. Geological Survey Minerals Information

CD-ROM: DICTIONARY OF MINING, MINERAL, AND RELATED TERMS

The U.S. Bureau of Mines updated and revised edition (1996) of the classic 1968 U.S. Bureau of Mines Dictionary of Mining, Mineral, and Related Terms is now available from the Superintendent of Documents, stock number 024-004-02436-4, for \$15.00 domestic and \$18.75 foreign. The Dictionary is available on CD-ROM only with no current plans to publish paper copies.

CD-ROM: MINERALS AND MATERIALS INFORMATION

The U.S. Geological Survey's Minerals and Materials Information, July 1996, CD-ROM is now available from the Superintendent of Documents, stock number 024-004-02437-2 for \$14.00 domestic and \$17.50 foreign. This quarterly CD-ROM features the 1994 and 1995 Minerals Yearbook chapters, the U.S. Bureau of Mines Statistical Compendium (20 years of data on 34 minerals and commodities), the Bureau's 1992-94 Publications List, the Mineral Commodity Summaries 1996, and other commodity statistics.

For information on future CD-ROM products in this series, contact Rodger Wedgeworth or Roger Loebenstein at 703-648-4756 and 703-648-4752, respectively. Other Minerals Information electronic dissemination options:

- Mines Fax-Back. To order materials, call 703-648-4999 from touch-tone handset on Fax machine.
- Mines-Data Bulletin Board: Log on via modem through 703-648-7799, or call Robin Johnson at 703-648-7943.
- Internet: For World Wide Web, access via Mosaic, Netscape, or other PC-based Web browsing software. The URL (Universal Resource Locator) is <http://minerals.er.usgs.gov/minerals/>. For help, contact Joseph Gambogi at 703-648-7718.

- - Do not reduce or modify this form in any way - -

Superintendent of Documents **Publications** Order Form

Order Processing Code:

*

YES, please send me the following:

_____ copies of _____

Stock# _____ at \$ _____ each (\$ _____ (foreign))

The total cost of my order is \$ _____. Prices include regular domestic postage and handling and are subject to change.

(Company or Personal Name) (Please type or print)

(Additional address/attention line)

(Street address)

(City, State, ZIP Code)

(Daytime phone including area code)

(Purchase Order No.)

**Charge your order.
It's Easy!**



P3

**To fax your orders (202) 512-2250
To phone your orders (202) 512-1800**

Please Choose Method of Payment:

Check Payable to the Superintendent of Documents

GPO Deposit Account -

VISA or MasterCard Account

(Credit card expiration date)

**Thank you for
your order!**

(Authorizing Signature)

Mail To: Superintendent of Documents
P.O. Box 371954, Pittsburgh, PA 15250-7954